This fiber is a graded-index multimode fiber with extended reach, optimised for 10 Gb/s transmission speeds. It has a 50 µm core diameter and a 125 µm cladding diameter. The fiber is designed for use at 850 nm, but can also be used at 1300 nm.

R&M OM3 and OM4 fiber are bend-optimized (see table). The fiber is compliant or better than all relevant network standards e.g.

- Range for 40(100)GBASE – SR4(10): 150 m
- Range for 10GBASE – S: 400 m

**Standards and norm**

This fiber exceeds the requirements of:

- IEC 60793-2-10 Category A1a.3
- ITU Recommendation G.651
- TIA/EIA-492AAAC

Testing methods are in accordance with the following standards:

- IEC 60793-1-XX: 2002
- EN 60793-1-XX: 2002
- FOTP-220 (DMD)

**Bend-optimized fiber**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Radius</th>
<th>Turns</th>
<th>Induced Attenuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>At 850 nm</td>
<td>37.5 mm</td>
<td>100</td>
<td>0.1 dB</td>
</tr>
<tr>
<td></td>
<td>15.0 mm</td>
<td>2</td>
<td>0.1 dB</td>
</tr>
<tr>
<td></td>
<td>7.5 mm</td>
<td>2</td>
<td>0.2 dB</td>
</tr>
<tr>
<td>At 1300 nm</td>
<td>37.5 mm</td>
<td>100</td>
<td>0.2 dB</td>
</tr>
<tr>
<td></td>
<td>15.0 mm</td>
<td>2</td>
<td>0.3 dB</td>
</tr>
<tr>
<td></td>
<td>7.5 mm</td>
<td>2</td>
<td>0.5 dB</td>
</tr>
</tbody>
</table>

**Material**

**Criteria**

- Core: The core is germanium doped
- Coating: Dual layer UV curable acrylate, type DLPC9. The coating offers excellent stable stripping performance, and a unique high and stable value for the dynamic stress corrosion coefficient. This gives a greatly improved mechanical protection of the fiber when used in harsh environments.

**Optical properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attenuation (of cable with fibers)</td>
<td>[dB/km]</td>
<td>At 850 nm: ≤ 3.0</td>
</tr>
<tr>
<td>Fiber attenuation (for reference only)</td>
<td>[dB/km]</td>
<td>At 850 nm: ≤ 1.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>At 1300 nm: ≤ 0.7</td>
</tr>
<tr>
<td>Numerical aperture</td>
<td></td>
<td>0.200 ± 0.015</td>
</tr>
<tr>
<td>In homogeneity of OTDR trace for any two 1000 metre fiber lengths</td>
<td>[dB/km]</td>
<td>Max.: 0.1</td>
</tr>
</tbody>
</table>
### Property

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit</th>
<th>Value</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bandwidth (OFL)</td>
<td>[MHz x km]</td>
<td>At 850 nm:</td>
<td>≥ 3500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>At 1300 nm:</td>
<td>≥ 500</td>
</tr>
<tr>
<td>Effective Modal Bandwidth(^1):</td>
<td>[MHz x km]</td>
<td>At 850 nm:</td>
<td>≥ 4700</td>
</tr>
<tr>
<td>Group index of refraction</td>
<td>--</td>
<td>At 850 nm:</td>
<td>1.482</td>
</tr>
<tr>
<td></td>
<td></td>
<td>At 1300 nm:</td>
<td>1.477</td>
</tr>
</tbody>
</table>

\(^1\) Effective Modal Bandwidth is assured by means of differential mode delay (DMD) measurement as specified in IEC 60793-1-49.

### Dimensional and mechanical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit</th>
<th>Value</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core diameter</td>
<td>[µm]</td>
<td>50 ± 2.5</td>
<td>IEC/EN 60793-1-20</td>
</tr>
<tr>
<td>Cladding diameter</td>
<td>[µm]</td>
<td>125.0 ± 1.0</td>
<td>IEC/EN 60793-1-20</td>
</tr>
<tr>
<td>Cladding non-circularity</td>
<td>[%]</td>
<td>≤ 1.0</td>
<td>IEC/EN 60793-1-20</td>
</tr>
<tr>
<td>Core non-circularity</td>
<td>[%]</td>
<td>≤ 5</td>
<td>IEC/EN 60793-1-20</td>
</tr>
<tr>
<td>Core-cladding concentricity error</td>
<td>[µm]</td>
<td>≤ 1.5</td>
<td>IEC/EN 60793-1-20</td>
</tr>
<tr>
<td>Primary coating diameter - uncoloured</td>
<td>[µm]</td>
<td>242 ± 7</td>
<td>IEC/EN 60793-1-21</td>
</tr>
<tr>
<td>Primary coating diameter - coloured</td>
<td>[µm]</td>
<td>250 ± 15</td>
<td>IEC/EN 60793-1-21</td>
</tr>
<tr>
<td>Primary coating non-circularity</td>
<td>[%]</td>
<td>≤ 5</td>
<td>IEC/EN 60793-1-21</td>
</tr>
<tr>
<td>Primary coating-cladding concentricity error</td>
<td>[µm]</td>
<td>≤ 10</td>
<td>IEC/EN 60793-1-21</td>
</tr>
<tr>
<td>Proof stress level</td>
<td>[GPa]</td>
<td>≥ 0.7 (≈ 1 %)</td>
<td>IEC/EN 60793-1-30</td>
</tr>
<tr>
<td>Typical average strip force</td>
<td>[N]</td>
<td>1.7</td>
<td>IEC/EN 60793-1-32</td>
</tr>
<tr>
<td>Strip force (peak)</td>
<td>[N]</td>
<td>1.0 ≤ F(_{\text{peak, strip}}) ≤ 8.9</td>
<td>IEC/EN 60793-1-32</td>
</tr>
</tbody>
</table>